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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/277,312 03/26/99 BUCKINGHAM

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EXAMINER

IM22/0416

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ART UNIT

PAPER NUMBER


1714

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/277,312	Applicant(s) BUCKINGHAM ET AL	
	Examiner VERONICA P. HOKE	Group Art Unit 1714	

☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire THREE month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-15 _____ is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-15 _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welna (671) taken with Annemaier et al.

This rejection , initially made over Welna per se was related in the office action mailed March 31, 2000 as follows:

“ Patentability is predicated on applicants determination that a fire retardant composition (Claims 1-10) suitable for caulking or sheet purposes **comprising a halogen-free polymer, a water insoluble intumescent mineral granule such an hydrated alkali metal silicate and / or expandable graphite**, optionally with an oxy boron compound **and a phosphorus containing flame retardant** is unobvious because it manifests “ a softness value of about 0.01 to about 3.75 mm.” Application of the composition to provide a fire barrier on doors or window (claims 11 and 12) as well as a process of making the composition itself (claims 13-15) by utilizing high shear mixing which may be provided by utilizing a heated twin screw extruder are claimed aspects as well. These are compositions and methods which are well within Welna’s teachings.

Welna discloses that a putty type composition comprising a rubbery resin which may be ethylene vinyl acetate or a synthetic or natural diene rubber (col.1, lines 46-57) and which is free of

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halogenous substances can be formed by incorporating suitable intumescent agents and a phosphorus containing flame retardant (col.4, line 19- col.5, line 62). The intumescent agents may comprise both a **hydrated alkali metal silicate** (optionally with an oxy boron compound) **and/ either expanded or expandable graphite** (col.4, line 21). The **flame retardant may be a phosphorus containing compound such as ammonium polyphosphate**. Applicant has merely adopted Welna's formulation in its expandable graphite aspect. Merely because Welna did not exemplify this formulation does not render his disclosure any less instructive .Although Welna's exemplified compositions' softness ratings are higher than applicants' maximum , applicants determination that utilizing the **expandable** graphite permits such attainment is not considered unexpected since the motivation resides in the fact that this is an obvious variation of one of Welna's preferred intumescent combinations comprising hydrated alkali metal silicate and expanded graphite. By utilizing the unexpanded graphite, any gap in the area previously filled will expand upon pyrolysis because the graphite will exfoliate, Utilizing already expanded graphite does not take in allowance the caulk 's possible shrinkage causing burning penetration that could be prevented by utilizing a form of graphite which would fill this void upon the onset of high thermal conditions. Accordingly the softness rating applicants report is inherent in adopting this variation of Welna's putty formulation. Softness can also be moderated by the amount of plasticizer utilized; this is within applicants claims scope as well. Accordingly there are well known alternative means of adjusting the ingredients other than graphite to attain particular levels of softness.

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Application of the putty to doors or windows as firestops is an objective inherent in Welna's disclosure of the composition's application to penetratable areas in building such as walls, floors and other areas adjoining vulnerable objects such as cables, etc. See the paragraph bridging cols 2 and 3."

The examiner in response to applicants counsel traversal (received August 1, 2000)
maintained:

" Contrary to counsel's assertion (response at page 2, second paragraph) the presently claimed invention does not preclude the plastic substances from being a blend of rubber and unvulcanized rubber, as related on pages 5 and 6 of the specification. At page 6, lines 14-18, a blend of a thermoset resin such as curable or cured polymers such as rubber and a thermoplastic polymer such as ethylene vinyl acetate is specifically indicated. This corresponds to Welna's inclusion of the same type blend's use in col. 1 of the patent.

Furthermore Welna relates that the composition is a putty. This malleable state relates that flexibility is indeed inherent. The comparable fire sealing capability of the composition is clearly not an issue. Applicants maximum softness rating of 3.75 as compared with reference's minimum of 4.0 rating is clearly obvious since:

1) Applicants utilize the same technique in making softness evaluations (applicant - pages 9 and 10 of the specification; Welna col.6, last paragraph through col.7).

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2) Applicants only comparative flameproofing data is directed to a composition , Composition A, in Table III on pages 20-21, differing solely by its absence of graphite. This composition's LOI rating is as much as 23 % less than applicants. However the data's significance is elusive, since Welna had already explicitly indicated (col.5, lines 10-12) this particular combination as a desirable one.

Moreover the flame test was not conducted in-situ under the conditions of use as contrasted with Welna's testing in accordance with fire testing procedures in accordance with industrially recognized penetratable fire stop test standards (cols. 7 and 8).

3) To settle for a lesser softness rating is not tantamount to establishing unobviousness because applicant has not in fact disproven this as being erroneous, Welna's requirement of a softness rating of at least 4 mm in order to obtain satisfactory sealing, flameproofing and flow properties."

The remarks accompanying the filing of this RCE application on February 22, 2001 restated that applicants composition contained far less plasticizer based on representative examples containing 1.01 or 1.05 %, such that a putty character as characterizes Welna's composition is unobtainable. In fact the response at page 2, last line in paragraph 2, states: "The material of the present invention, in contrast to the Welna putty, however, cannot be shaped or molded by hand with ease."

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The traversal further contends (paragraph bridging pages 2 and 3) that although the Welna putty may be capable of being modified to have a softness value of from 0.01 to about 3.75 mm, there is no suggestion or motivation to do so.

This response ignores the fact that for Welna to have determined that the softness rating needed to be at least 4.0 mm (specification at col.1, lines 25-35) , in order to produce a putty-like nature in its malleability and flow, yet sufficiently strong “ to withstand a hose stream test”, would have had to test materials having a lesser softness rating in order to make such an assessment. Ergo , compositions having a greater hardness , i.e., having softness ratings less than 4.0 mm did not meet the “ balance between softness and conformability and flow resistance at elevated temperature.” See col.3, line 50 et seq. A less soft composition would hardly as likely flow as readily. Plasticizer content is not the sole determinant of softness as evinced by Welna’s suggestion that preferably both an unvulcanizable rubber such as ethylene vinyl acetate resin and a vulcanizable rubber such as natural or synthetic diene rubbers, as characterizes this applications compositions, be conjointly present in an amount which is no greater than 50 % by weight of the entire composition. Applicants resin compositions are comparable in polymer content and amount.

According to Annemaier et al (ex. 2, in col.6) the conjoint presence of an ethylene vinyl acetate powder (comparable to applicants dried emulsion) along with ammonium polyphosphate flame retardant and one or more of water insoluble mineral granules which are a metal silicate such as foamclay, and expanded perlite or expanded graphite, provide intumescent fire blocking compositions for packing about flammable materials such as cable bulkheads in ceilings and walls

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Since Annemaier requires no plasticizer, his compositions clearly do not exhibit the softness ratings of the order Welna seeks. It is evident that faced with providing fire blocking for use in buildings such as walls and ceilings that the routineer cognizant of Annemaier's disclosure would readily appreciate that a putty nature due to the high plasticizer content characteristic of Welna's otherwise comparably constituted composition, was unnecessary to achieve adequate intumescent fire blocking properties.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welna (671) and Annemaier, as applied to claims 1-12 above, and further in view of Michaeli..

This rejection initially stated:

“ One of the disclosed methods for preparing Welna's putty is by utilizing a “mogul “ mixing device which is ostensibly productive [sic] of high shear conditions because it is equipped with circulating cooling water (col.6, lines 35-41). In so far as a twin- extruder is utilized by applicants, Michaeli relates (page 94) that this is a typical compounded device for plasticating mixes. Applicants mix is considered a plasticable mix for the reasons stated above.”

The remarks in the communication accompanying the filing of this RCE application contended that since Micheali was not directed to achieving the instant goal of a fire sealant composition having a softness rating of 0.01 to about 3.75, his disclosed high shear mixing apparatus for

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incorporating additives with polymers, was inapplicable as a secondary reference in relating obviousness of blending Welna's materials, absent a plasticizer, in this fashion.

It is clear from Annemaier's examples 1 and 2 that hand mixing alone is sufficient to blend the materials together. Michaeli merely explains that Welna's disclosure of utilizing a "Mogul" [sic] mixer as a typical mode of admixing the materials, inherently incurs high shearing. Hence the ultimate property characteristics of the final product are not an issue in applying this blending apparatus in achieving same.

vph

April 13, 2001

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